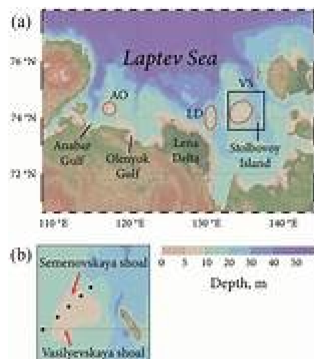
Ryan Padraig Kelly Laptev Sea



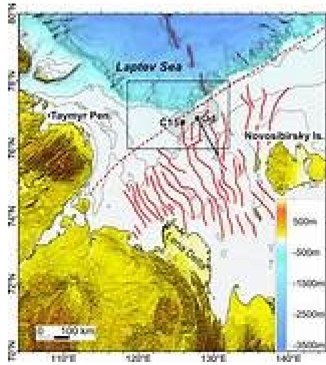






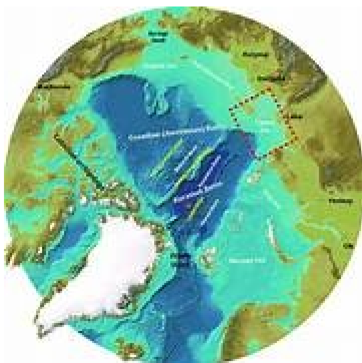




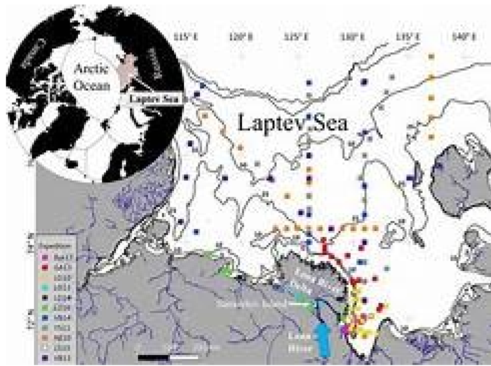

Laptev Sea
Taymyr Pen.
Novosibirsky Is.
500m
-500m
-1500m
-2500m
-3500m
100 km
110°E
120°E
130°E
140°E



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10
LAPTEV SEA FACTS
YOU MIGHT NOT KNOW

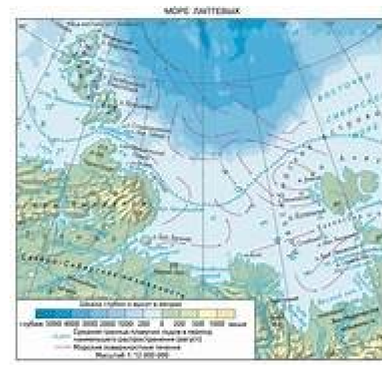


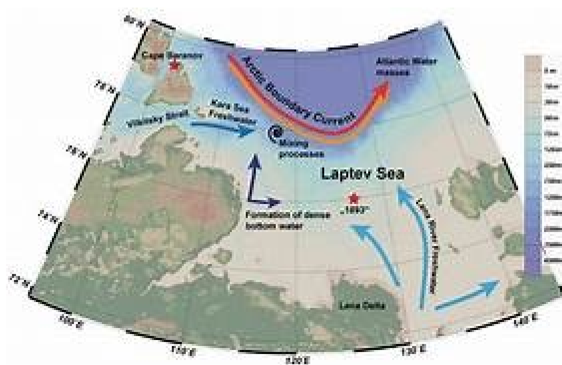
Laptev Sea


Arctic Ocean
Laptev Sea
Laptev Sea


Laptev Sea

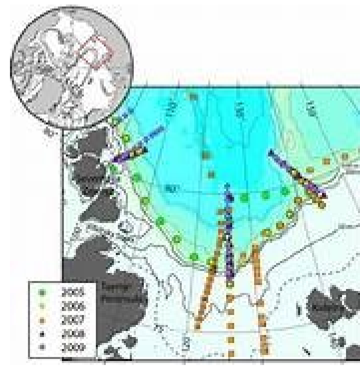

Google earth

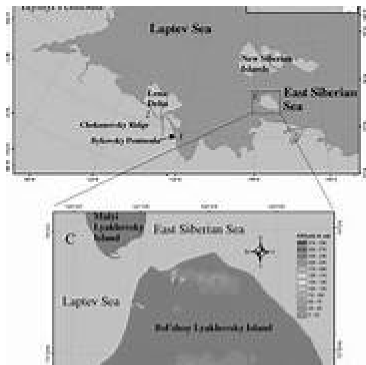


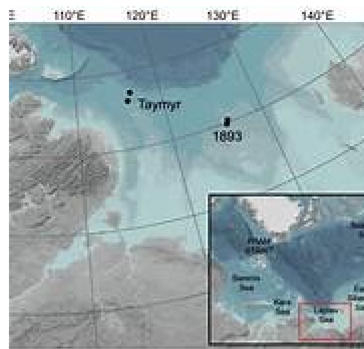

Cape Baranov
Arctic Boundary Current
Atlantic Water masses
Vilkitsky Strait
Kara Sea Freshwater
Mixing processes
Laptev Sea
Formation of dense bottom water
Lena River Freshwater
Lena Delta

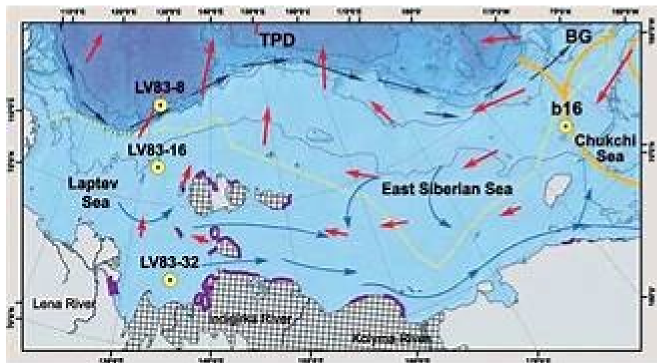

Arctic Ocean
Kara Sea
Severnaya Zemlya
Laptev Sea
East Siberian Sea
Taymyr Peninsula
Dudinka
Igarka
New Siberian Islands
Tiksi
RUSSIA
NORTH


North Pole
86°13.6'N
Arctic Ocean
Spitsbergen
Barents Sea
Franz
Josef Land
New Siberian
Is.
Tromsø
Norway
Vardø
Novaya
Zemlya
Kara Sea
Cape
Chelyuskin
Laptev Sea
Sverdrup I.
Taymyr
Peninsula
Olenyok
River
Khabarova
Yenisei
River
Siberia

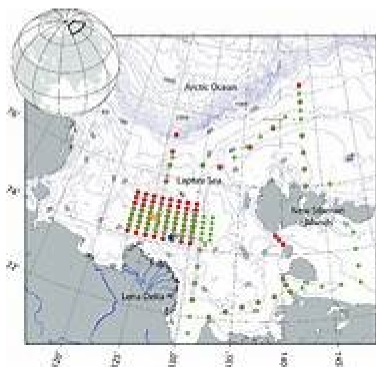

2005
2006
2007
2008
2009

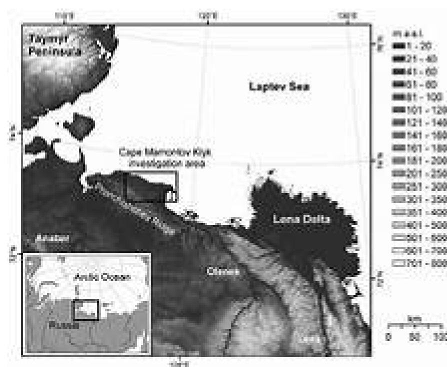

Laptev Sea
New Siberian
Islands
East Siberian
Sea
Lena
Delta
Chekanovsky Ridge
Bykovsky Peninsula
East Siberian Sea
C
Laptev Sea


110°E
120°E
130°E
140°E
Taymyr
1893

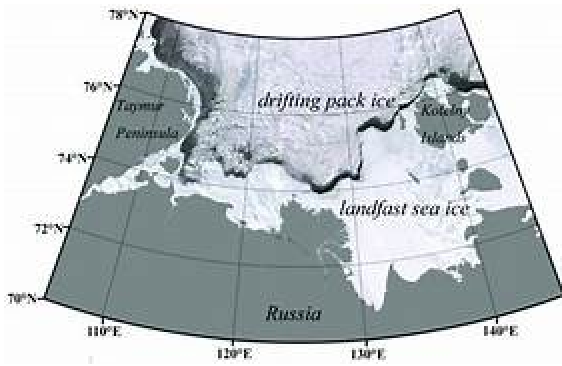

TPD
BG
LV83-6
b16
Chukchi
Sea
LV83-16
Laptev
Sea
East Siberian Sea
LV83-32
Lena River
Indigirka River
Kolyma River

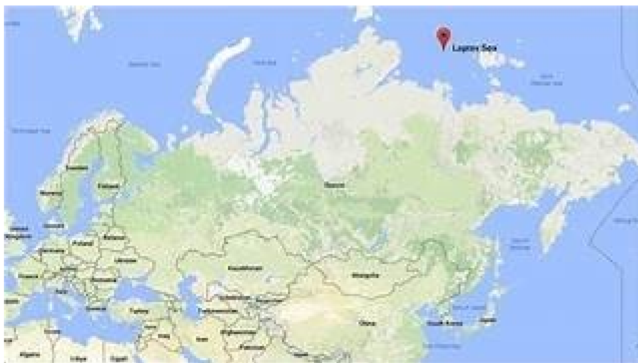


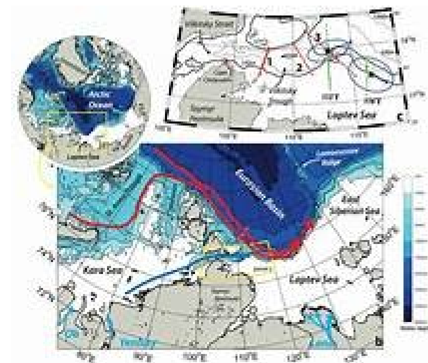

Arctic Ocean
Laptev Sea
Lena Delta

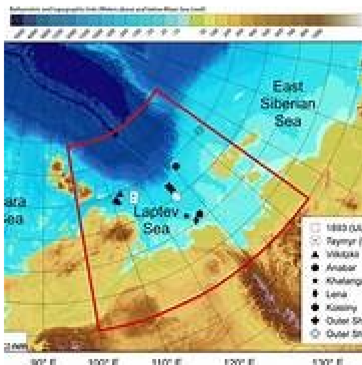

110°E
120°E
130°E
Taymyr
Peninsula
Laptev Sea
Cape Mamontov Klyk
investigation area
Anabar
Lena Delta
Olenek
Arctic Ocean
Russia
m a.s.l.
1 - 20
21 - 40
41 - 60
61 - 80
81 - 100
101 - 120
121 - 140
141 - 160
161 - 180
181 - 200
201 - 250
251 - 300
301 - 350
351 - 400
401 - 500
501 - 600
601 - 700
701 - 800
km
0 50 100

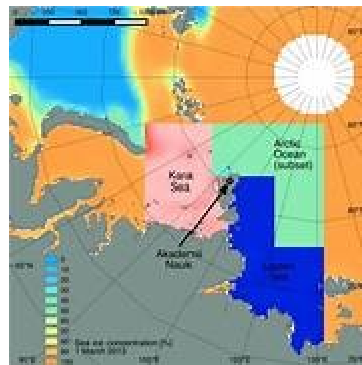

KARA SEA
LAPTEV SEA

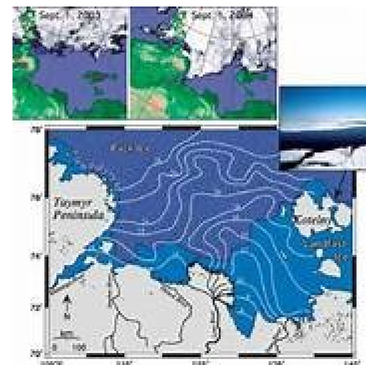

78°N
76°N
74°N
72°N
70°N
Taymyr
Peninsula
drifting pack ice
Kotelny
Islands
landfast sea ice
Russia
110°E
120°E
130°E
140°E


Laptev Sea


Arctic
Ocean
Eurasian Basin
East
Siberian Sea
Kara Sea
Laptev Sea


East
Siberian
Sea
Laptev
Sea
90° E
100° E
110° E
120° E
130° E


Kara
Sea
Arctic
Ocean
(subset)

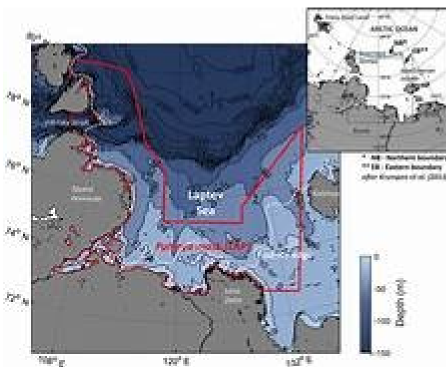

Taymyr
Peninsula

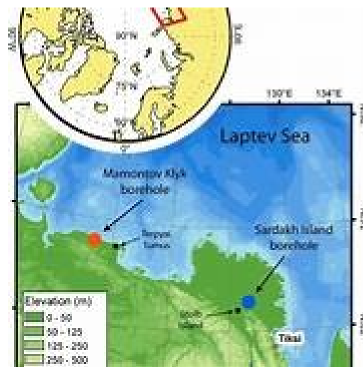


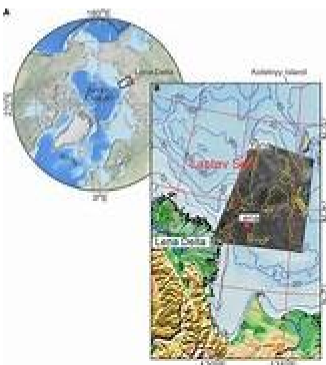

bedrock coasts
glaciers outlet coasts
permafrost coasts
Yedoma Ice Complex distribution confidence
confirmed
likely
uncertain
Laptev Sea


Laptev Sea
Mamontov Klyk borehole
Sardakh Island borehole
Tiksi
Elevation (m)

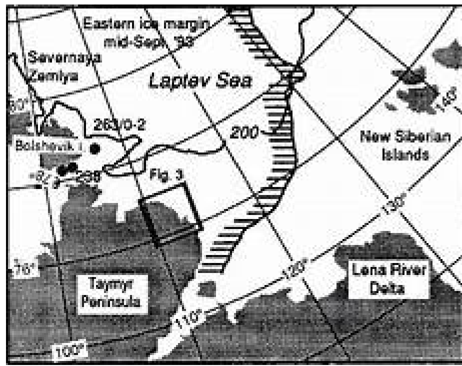



Laptev Sea
ARCTIC OCEAN
Depth (m)
120° E


130°E
134°E
Laptev Sea
Mamontov Klyk borehole
Sardakh Island borehole
Tiksi
Elevation (m)
0 - 50
50 - 125
125 - 250
250 - 500

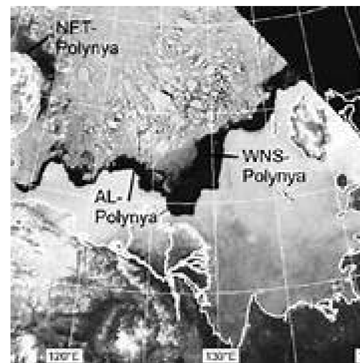

Lena Delta
Laptev Sea
130°E


Arktischer Ozean
Karasee
Sewernaja Semlja
Laptevsee
Ostsibirische See
Taimyr - Halbinsel
Neusibirische Inseln
Dudinka
Norilsk
Igarka
Tiksi
0
(km)
800

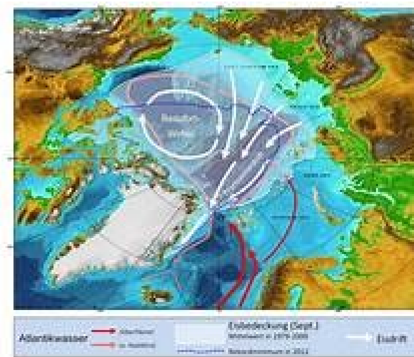

Eastern ice margin
mid-Sept. '93
Severnaya
Zemlya
Laptev Sea
200
Bolshevik I.
Fig. 3
New Siberian
Islands
Taymyr
Peninsula
Lena River
Delta
76°
100°
110°
120°
130°
140°



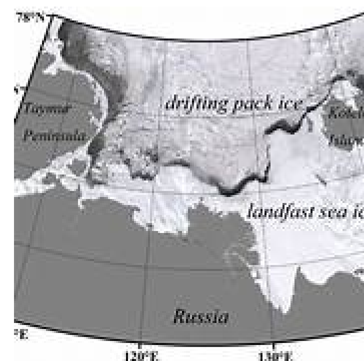



NET-
Polynya
WNS-
Polynya
AL-
Polynya
120°E
130°E

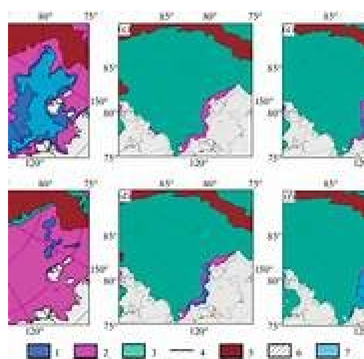



Atlantikwasser
Eisbedeckung (Sept.)
Eisdrift

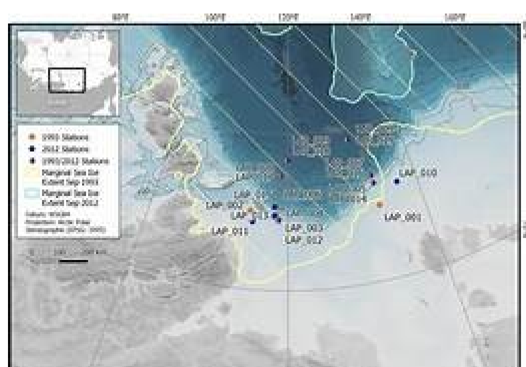

alamy
www.alamy.com

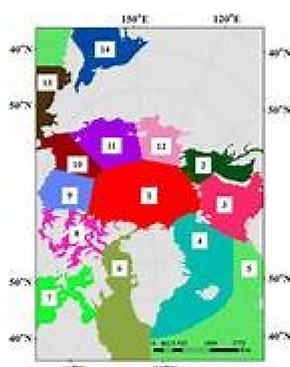

78°N
Taymyr
Peninsula
drifting pack ice
Russia
120°E
130°E

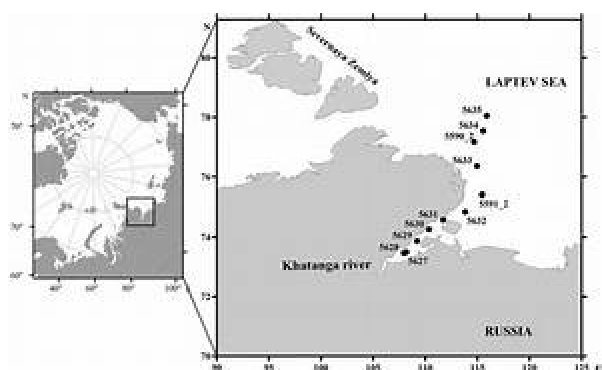
Laptev Sea
Kotelny
New Siberia
East Siberian Sea
Lena Delta
Yana Delta
Yana-Kolyma Lowland
0 100 km











Winter ice production, CESM-LE

a)

1979-2020

NEW SIBERIAN ISLANDS

SIBERIA

LAPTEV SEA

ARCTIC OCEAN

SEVERNAYA ZEMLYA

KARA SEA

NOVAYA ZEMLYA

GREENLAND

0 5 10 15

mm/day

Mean sea ice velocities, satellite

b)

1979-2020

0 2 4 6

cm/s

Laptev Sea

LAPTEV SEA SHELF (1218)

Figure 1. Map showing location of the Laptev Sea Shelf Province and assessment units.

МОРЕ ЛАПТЕВЫХ

1993 Stations

2012 Stations

1993/2012 Stations

Marginal Sea Ice Extent Sep 1993

Marginal Sea Ice Extent Sep 2012

LAP_010

LAP_001

LAP_003

LAP_012

LAP_011

Winter ice production, CESM-LE

a)

1979-2020

NEW SIBERIAN ISLANDS

SIBERIA

LAPTEV SEA

ARCTIC OCEAN

SEVERNAYA ZEMLYA

KARA SEA

NOVAYA ZEMLYA

GREENLAND

0 5 10 15

mm/day

Mean sea ice velocities, satellite

b)

1979-2020

0 2 4 6

cm/s

IBCAO ocean depth (m)

Bolshevik Island

(e)

Mean

IBCAO depth (m)

FESOM EKE (cm²/s²)

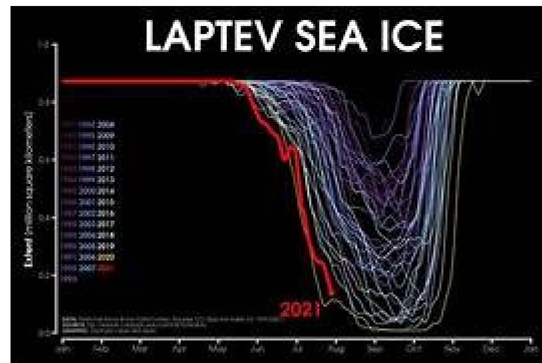
(f)

Ocean surface velocity cm/s

120°E 130°E 140°E 150°E







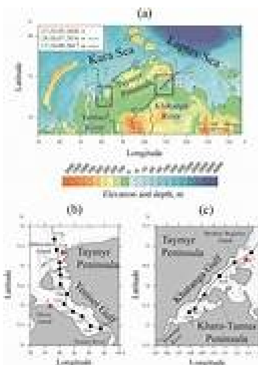






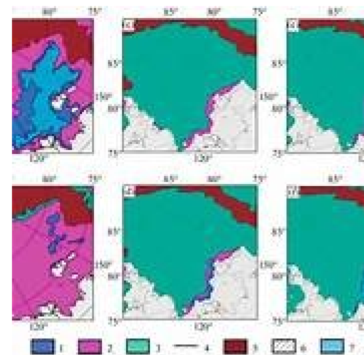


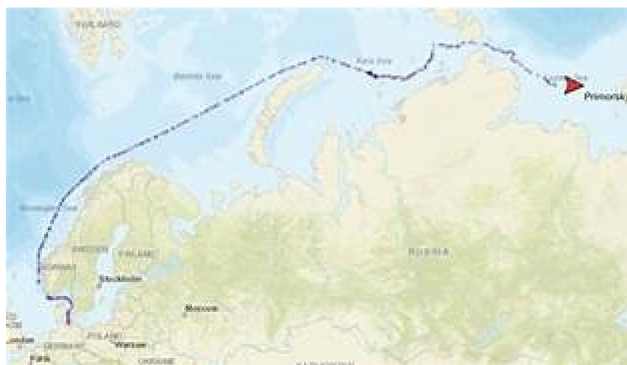
Figure 1. Map showing location of the Laptev Sea Shelf Province and assessment units.




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LAPTEV SEA FACTS
YOU MIGHT NOT KNOW

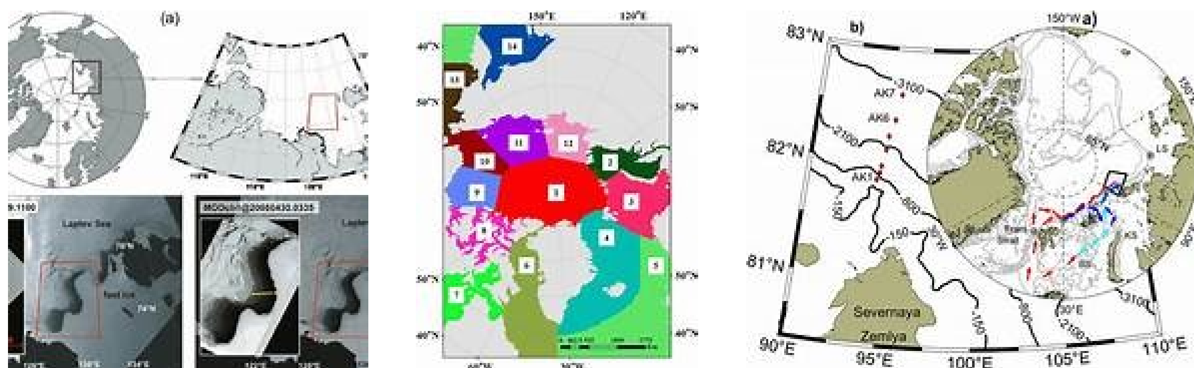

Laptev Sea




Primorsky


North Pole
Arctic Ocean
86°13.6'N
Spitsbergen
Barents Sea
Franz
Josef Land
New Siberian
Is.
Tromsø
Norway
Vardø
Cape
Chelyuskin
Kara Sea
Laptev Sea
Novaya
Zemlya
Sverdrup I.
Taymyr
Peninsula
Olenyok
River
Khabarova
Yenisei
River
Siberia

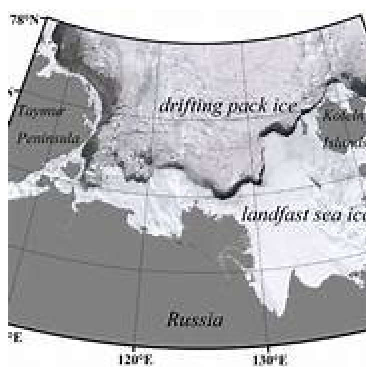
Major Waterways
Arctic Ocean
Barents Sea
Kara Sea
Laptev Sea
East Siberian Sea
Bering Sea
Sea of Okhotsk
Caspian Sea
Lake Baikal



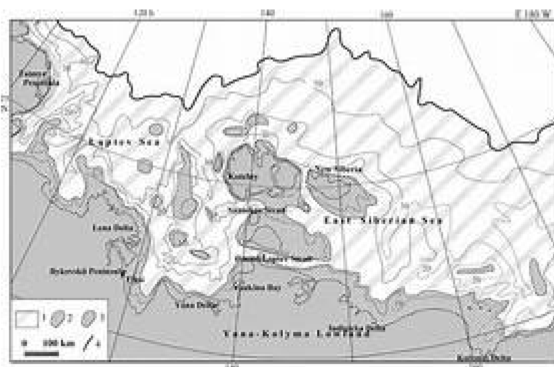
(a)
Laptev Sea
fast ice
83°N
82°N
81°N
b)
150°W
a)
AK7
AK6
AK1
3100
2100
Fram Strait
Severnaya
Zemlya
90°E
95°E
100°E
105°E
110°E



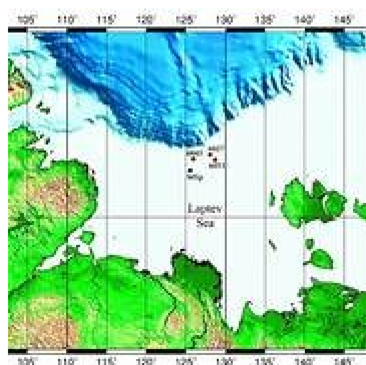




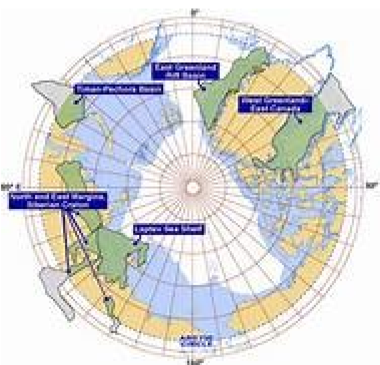
78°N
drifting pack ice
Taymyr
Peninsula
Russia
120°E
130°E



Laptev Sea
East Siberian Sea
Lena Delta
Yana Delta
Yana-Kolyma Lowland



105°
110°
115°
120°
125°
130°
135°
140°
145°
Laptev
Sea

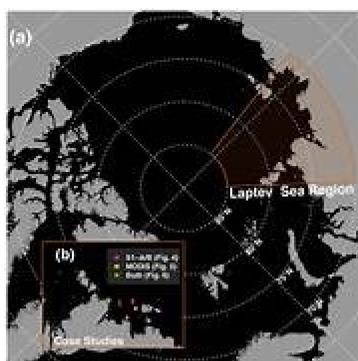


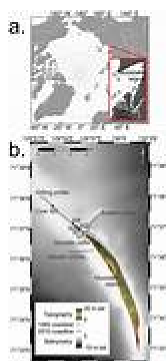
East Greenland
Rift Basin
Timan-Pechora Basin
West Greenland-
East Canada
North and East Margins,
Siberian Craton
Laptev Sea Shelf
ARCTIC
CIRCLE

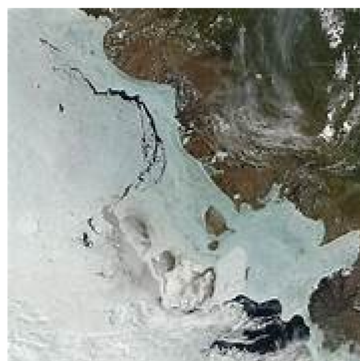
2012

Timing of ice retreat



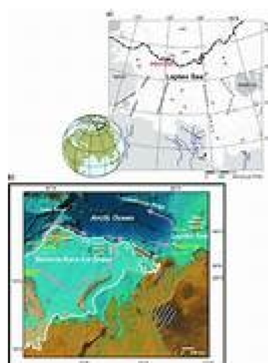






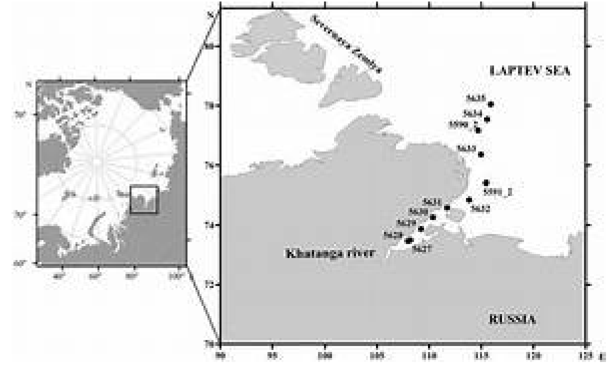












Severnaya Zemlya
LAPTEV SEA
Khatanga river
RUSSIA



